Mathematics 552 Quiz #6 Name:

1. State the Cauchy integral theorem.

2. Let *D* be a bounded domain and with boundary Γ traversed so that *D* is always on the left. Then state Green's theorem for the line integral $\int_{\Gamma} P(x, y) dx + Q(x, y) dy$.

3. Let D be a bounded domain and with boundary Γ traversed so that D is always on the left. Let f(z) = u + v i be a function which is analytic on D and Γ . Then use Green's theorem and the Cauchy-Riemann equations to prove the Cauchy integral theorem for f(z).

4. State the Cauchy integral formula.